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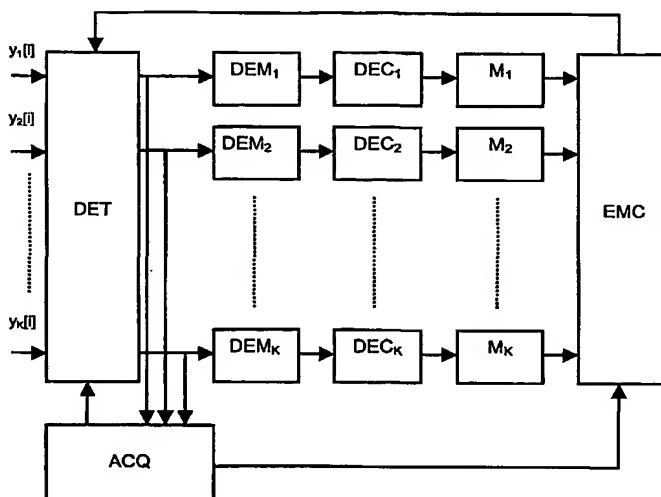
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(54) Title: COMMUNICATION METHOD AND APPARATUS FOR MULTI-USER DETECTION



(57) Abstract: In a multi-user detection receiver, a multi-user detector DET receives a signal from a multiple access channel MA and the current soft estimates of each user's contribution to the received signal, and outputs updated soft estimates for each user by subtracting the current soft estimates of all the interfering users. The updated soft estimate or soft demodulated by soft demodulators DEM<sub>1</sub>...DEM<sub>K</sub>, the coded by soft decoders DEC<sub>1</sub> ... DEC<sub>K</sub> which refine the probabilities of the coded bits derived from the soft demodulators DEM<sub>1</sub>...DEM<sub>K</sub>, by taking into account the knowledge of the code, and output to soft modulators M<sub>1</sub> ... M<sub>K</sub>. For each iteration of the MUD receiver algorithm, an acquisition function ACQ acquires the timing of the estimates of each user's contribution to the channel for use by the detector DET in the next iteration, giving improved acquisition performance over conventional single-user techniques.